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# Agricultural Libraries Information Notes



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The unveiling of the Statue of Liberty in 1886. This photograph from the U.S. Department of Agriculture Photograph Collection was made by the New York Museum of Modern Art and was contributed to USDA by the Library of Congress. Film No. CEN-48. This and the other photographs in this article are included on the laser disk described here.

## EVALUATING OPTICAL LASER DISK STORAGE AND RETRIEVAL SYSTEMS FOR NON-PRINT ACCESS AT NAL

by Alan E. Fusonie  
Head of Special Collections, NAL

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Visual Information Specialist, Special Collections, NAL

### INTRODUCTION

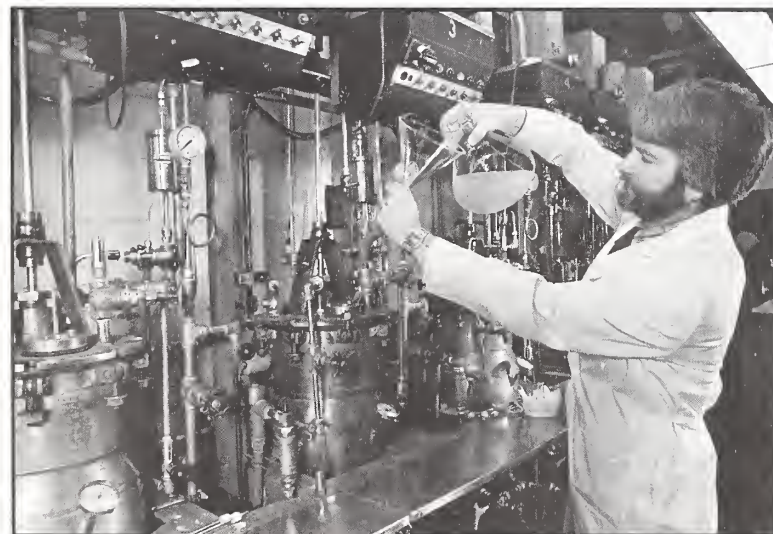
Historically, the first optical disk for storage of television images probably began to develop in the 1920's with the pioneering efforts of James Logie Baird who experimented with mechanical scanners and display devices. Broadcast programming began on a very modest scale in the 1930's. Fuzzy images on tiny screens showed events such as the 1932 Munich Olympics, and the Coronation in Great Britain. The BBC began regularly scheduled programming in 1939. Television technology benefitted from the development of radar during World War Two, and television's popularity in America grew from its introduction following the war to an obsession in the 1950's and the major factor it is in our society today.

Image quality improved, but until the middle 1950's television was "live" or





Dr. Johanna M. Holden Moore, a chemist at USDA's Agricultural Research Center in Wyndmoor, PA, conducts research to find new ways of preserving hides and tanning leather that are efficient and safe for the environment. Here she does a gel film test to determine microbial activity in cow hide extract. January 1986. USDA Photo, No. 0186X014-3.



Microbiologist Rodney J. Bothast, leader of the project working with the yeast called "odd" that converts xylose, or wood sugar, to ethyl alcohol, here adds a solution of xylose to a pilot fermentor. Peoria, IL, April, 1981. USDA Photo, No. 0481X448-34A.

on film. The only way to save a program was to make a kine-scope, a motion picture shot directly off the television tube. Magnetic tape technology, developed for audio recording, was soon adapted for video recording. It took twenty years to refine video tape recording so that it was practical for home use.

The invention of the laser held promise for many new applications, but it also took nearly twenty years, until the early 1970's, to develop and refine a device to reproduce high quality images on a television screen. Home laser video players were produced and thousands of motion pictures were distributed and sold on laser disk. However, because of the cost of the laser unit, laser video disk equipment was more expensive than home videotape players and non-opti-



Isolated in a soundproof room, engineer J. C. Webb is listening for fruit fly larvae chewing on the fruit pulp inside a grapefruit. This new system of detecting insects could prevent destruction of the fruit and help to eradicate the pest. Gainesville, FL, April 1984. USDA Photo by Barry Fitzgerald. No. 0484x505-17A.

cal video disk players. It failed on the consumer market, but its use continued in industry because of several unusual characteristics:

1. Laser disk images show no wear and no degradation of quality from repeated use.
2. An image can be located precisely on a laser disk and that location address doesn't change.
3. Laser disks are an ideal medium for multi-path, programmed instruction.

Today, the popularity of audio compact-disk players has resulted in development of lighter lasers, and thus, faster optical disk drives, and has resulted in some over-all reduction in price.

As we close out the 1980's, optical laser disk technology is a revolution in the making which will change how we store, retrieve, distribute, utilize and display photo and art collections, and other rare and fragile materials.

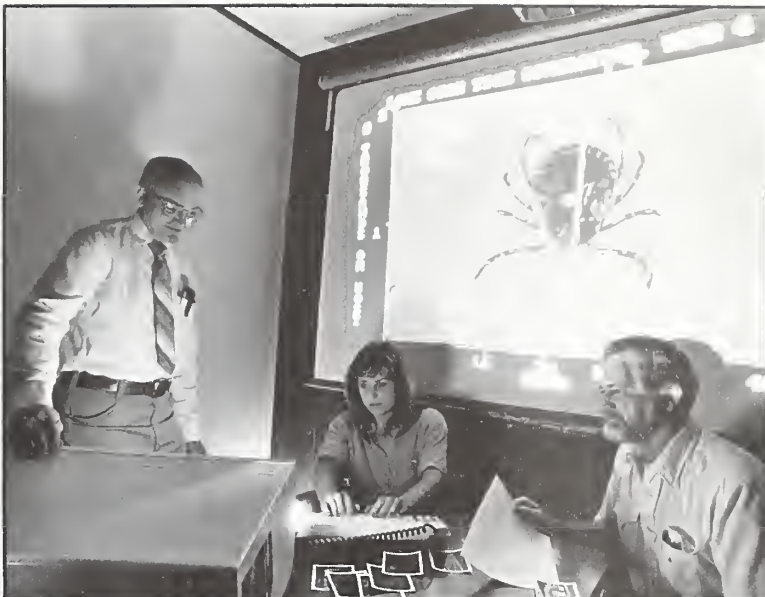
#### THE COMPLETED FOREST SERVICE PHOTOGRAPH COLLECTION LASER DISK PROJECT

Today, the National Agricultural Library is actively involved in evaluating optical laser disk technology and its application to visual and textual knowledge in agriculture. In particular, the Forest Service Photograph Collection Laser Disk Project entailed putting the Browsing File of the Forest





The photographs on these two pages (2-3) give a glimpse of the research conducted by USDA scientists and covered by the project to put the photographs on laser disk. (Above) Geneticists Robert E. Hanneman and Roman W. Ross study herbarium specimens of various potato introductions at the Inter-Regional Potato Introduction Project. Sturgeon Bay, WI, May 1978, USDA Photo No. 0578X579-27A. (Above Right) Ticks, mosquitoes, roaches, and other insects as well as the diseases they transmit, might one day be defeated by insect fighters armed with personal computers; (L-R) Gary A. Mocht, computer programmer Patricia Jones, and engineer Daniel G. Haile of the Insects Affecting Man and Animal Research Laboratory have already developed an experimental model for the Lone Star Tick. Gainesville, FL, July 1986, USDA Photo No. 0786X910-II.



(Above) Freddi Hammerschlag, a physiologist with USDA's Agricultural Research Service, holds a jar containing two small peach tree shoots. She used tissue culture techniques to screen large numbers of cells in a concentrated effort to combat leaf spot, one of the fruit's worst diseases. Specimens of these disease-resistant shoots will be planted outdoors in a two-year test to determine whether they will remain disease free. Beltsville, MD, September 1985, USDA Photo No. 0985X998-29.

Service historical photo collection on disk and building a database for the collection on a personal computer. Users can search the database under many strategies, and can display the picture and accompanying information on adjacent video screens.

The Forest Service Photograph Collection was started in 1898, under the direction of Gifford Pinchot (1865-1946) who was appointed Chief of the Division of Forestry. In that leadership capacity, Pinchot required his forestry agents to include photographs, and good documentation, in oversight reports from the field. The project's main focus was the browsing films, which contain 60,000 of the most frequently requested and reprinted captioned photos from the collection.

In 1985, the U.S. Forest Service provided a research and development grant to produce the laser disk. NAL signed a cooperative agreement with the University of Maryland

Library Non-Print Media Center to perform the work. [See box on page 4 for "Work Plan."]

### MASTERING COSTS

Basic mastering and replication costs included the following items:

- Creating two check disks for verification of material before mastering: \$1,500.00;
- Creating a disk pressing master, including transfer of 60 seconds of live-action motion picture film: \$2,400.00;
- Pressing four hundred copies at \$12.00, one side: \$4,800.00;
- Total: \$8,700.00;

Each disk cost \$21.75 to manufacture not including the



## **WORK PLAN: NAL/FOREST SERVICE PHOTO COLLECTION OPTICAL LASER DISK PROJECT**

Project Managers: NAL--William G. Hauser, and UM--Alan Rough.

Project Workers: NAL--Alan E. Fusonie, William G. Hauser, and volunteers.

UM--Paul Malec, Alan Rough, and four students; Patrick Taylor, Chris Schlesiger, Roopa Mangalmurti, and Beth Sammons.

Project Location: NAL Special Collections, Beltsville, Maryland.

Work Organization: Work teams of two, from July to mid-September 1986.

Imaging: Forest Service Browsing File mounts were photographed on color-negative 35mm motion picture film.

Initial Database Entry: As the pictures were photographed by one team member, the partner entered in C-Quest (a commercially available photo database management system from Image Concepts, West Boylston, MA) information about the photo, including subject, location, photographer, date taken, accession number, and other important data.

Quality Control: Project workers performed a series of processing and quality control evaluations of data input, image quality, and later reviewed a laser check disk for quality and field-dominance errors.

Commercial Disk Production: A professional television studio transferred the motion picture film to broadcast-quality videotape, and 3M Corp. produced the check disks and the final disks.

Disk Album Cover: Produced at UM, using a Macintosh for the text, by Marianne C. Rough.

Database Linking for Laser Disk Image Finding: After delivery of the completed disk, NAL Staff added the disk location number of each image to its corresponding C-Quest database record.

## **BENEFITS**

Optical laser technology may revolutionize the way in which users approach photo research. The Forest Service laser disk has already accomplished the following:

- Improves awareness and increased speed of image access to the Forest Service Browsing File located at the National Agricultural Library;
- Provides the photo researcher with quick and efficient image access to major portions of the Browsing File without examining the original mounts;
- Allows access to each photo in the Browsing File through many, rather than just one search-access point;
- Provides users away from NAL with an efficient way to review, identify, and order photo reproductions;
- Provides Forest Service photos in a video format for use in videotapes or computer digitization;
- Reduces handling of original photo mounts and prints in the Browsing File which compliments archival and preservation efforts;
- Helps reduce travel and lodging costs often associated with photo research.

## **THE USDA/OGPA PHOTOGRAPH COLLECTION WORM DISK PROJECT**

As a part of the U.S. Department of Agriculture's Productivity Improvement Program, a review team was created. Included on this team were visual information specialists from USDA agencies such as:

APHIS--Animal and Plant Health Inspection Service

ARS--Agricultural Research Service

FS--Forest Service

FSIS--Food Safety Inspection Service

SCS--Soil Conservation Service, and

OGPA--Photographic Section, Office of Governmental and Public Affairs.

cost of developing the media on the disk. Average manufacturing costs have declined by about 1/3 since 1986.

## **DESCRIPTION OF THE COMPLETED NAL/FOREST SERVICE PHOTO COLLECTION LASER DISK**

The completed NAL/Forest Service Photo Collection Laser Disk contains over 34,000 black and white photos in 69 general subject chapters, 500 color slides, 55 color botanical illustrations, 175 maps, and an award-winning, 60-second Smokey Bear public service announcement. The database is recorded on magnetic media and occupies about 16 megabytes, including the NAL version of the C-Quest Subject Dictionary.

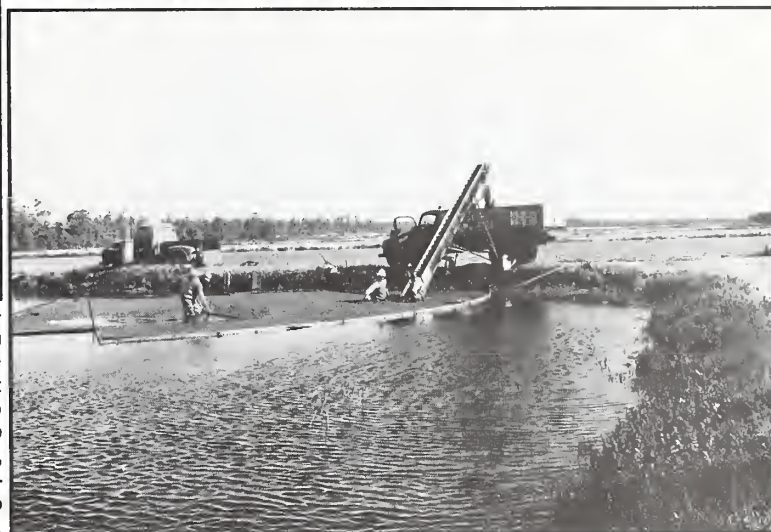


In the foreground is a section of land with two irrigation systems operating and a silage operation in one quarter. Note the pattern of non-irrigated corners. The next six quarters are owned by Gus Tsieszen, who has developed the "Oasis" system and is experimenting with his first model in the center of the second section. Near Atkinson, NE, September 27, 1967. USDA/Soil Conservation Service Photo by Erwin Cole, No. NEB-2175.





Subjects of the photographs in the disk-project include all aspects of agricultural activity. Methods of doing work on the farm are shown from the time of the beginnings of photography in the 19th Century up to the present. (Above) Harvester Robert Carlton, left, helps Melvin James load a pickup with peppers to be driven to market. Pickers are local people, who also help the Jameses with their labor-intensive tobacco crop. Bowden, NC, July 1981. USDA Photo No. 0781X822-5A. (Above Right) Wheeling off harvested cranberries at A.D. Makepeace Co's Wankinco bog. Carver, MA, October 1963. USDA/SCS Photo by Deland, No. MASS-228. (Right) Elevating cranberries into a truck, the final step in removing berries picked during the wet-method. Men are pushing berries on to the elevator. Haines Farm, Chatsworth, Burlington Co., NJ, September 24, 1963. USDA/SCS Photo by R. Hutchins, No. N.J.-40,482.



OGPA houses the centralized USDA files of current and historic photographs. It was the recommendation of the team that USDA photo collections within the agencies, and the central USDA collection be put on laser disk. In September of 1987, the USDA transferred money to NAL to establish new cooperative agreements, one with the University of Maryland for student aides and technical production support, and another with Catholic University for library students to do photo cataloging/indexing at NAL. The existing but outmoded manual USDA photo reference system, based partly on human memory, with scattered local photo files, difficult to access and slower than desirable response time, would soon be replaced by WORM laser disk technology driven by the C-Quest photo database management software system to control and display a laser disk generated image and accompanying data on adjacent video screens.

## WORK PLAN: NAL/OGPA PHOTO COLLECTION OPTICAL WORM LASER DISK PROJECT

Project Managers: NAL--William G. Hauser, and UM--Alan Rough.

Project Workers: NAL--William G. Hauser, Claudia Weston, and Ronald Young; UM--Alan Rough, and one student, Pat Taylor; Catholic University, John Fay.

Project Location: NAL Special Collections, Beltsville, Maryland; and remote search site, USDA, OGPA, Washington, DC.

Work Organization: Individual workers, beginning April 1988.

Imaging: Photographs selected by OGPA are recorded as still frames on an 8-inch Panasonic WORM (Write Once Read Many) Optical Laser Disk using high-resolution Sony 3CCD (Charge Coupled Device or "chip") Camera; Certain areas can be enlarged as an additional exposure.

Quality Control: During imaging, project workers evaluate image quality, by viewing on a 19-inch Sony Trinitron Monitor; A poor image cannot be erased, but since no record of a poor image is entered in the database, none





On the photo disk one can also trace an agricultural industry from farm to marketed product. (Above) Aerial view of the Snake Valley hatcheries. Buhl, ID, February 1981. USDA Photo by Lowell Georgia, No. 0281X174-22. (Below) The Thousand Springs Processing Plant north of Buhl, Idaho, uses automated equipment to gut, clean, and package fish. Buhl, ID, February 1981. USDA Photo No. 0281X176-3A.



(Above) Harvested catfish are skinned and cleaned prior to being sold to local restaurants and supermarkets. Arkansas, May 1981. USDA/SCS Photo by Tim McCabe, No. AR-62,458. (Below) Early morning steam rises around workers at a College of Southern Idaho fish hatchery as 58-degree water in the raceways hits 14-degree air temperature. The College-run hatchery does research on genetic breeding to increase egg numbers and fish quality. Twin Falls, ID, February 1981. USDA Photo by Lowell Georgia, No. 0281X181-8.



will be seen by the user.

Database Entry: Pictures previously recorded on the WORM Disk are reviewed along with information provided by OGPA; information about the photo, including subject, location, photographer, date taken, accession number, and

caption information are entered in the C-Quest Photo Database.

Data Backup: At least once each day the updated database is copied to a 20 megabyte bernoulli cartridge.

Data and image Transmission to Remote Site: an Iomega



bernoulli disk cartridge containing the database, along with a copy of the updated WORM Disk, is exchanged with the OGPA remote search site each month.

**Commercial Disk Production:** Two full 8-inch WORM disks of 24,000 images each may eventually be combined to create one 12-inch commercial disk for external distribution.

## BENEFITS

Laser WORM disk technology will allow more people to access and view a greater number of photos and result in improved service to the media and other users of USDA photography. Analog WORM disk technology allows photos to be added to a currently in-use optical disk both quickly and easily, creating a true photo database without an unacceptable penalty for storage of large amounts of picture data. Specifically achievable benefits from this photo project are:

- To increase the use of USDA photographs through broader access and wider distribution.
- To broaden and expedite service to the media and the public through remote user video work stations and through a sophisticated database cross-referencing and search capability.
- To achieve secure, archival protection of irreplaceable original negatives, prints, and transparencies.
- To create a database that will be an efficient, permanent, finding system for photographic images, now stored at USDA, which will later be offered to the National Archives and Records Administration (as required by law).
- To increase the value and visibility of photo documentation to those in top management positions.
- To reproduce reference copies readily in house at NAL using a WORM disk, computer, and printer, or to digitize and transmit reference copies to people who have FAX equipment.
- To provide photos in a video format for use in videotapes or computer digitization.
- To achieve long term savings in labor costs through more cost-effective access with less dependence on human expertise and "institutional memory."
- To build a database finding aid easily used with a future commercial disk with little or no modifications.
- To establish and maintain a mastering and disk authoring system with long term capabilities and cost effectiveness in terms of future photo collections.

## COSTS

Basic mastering and authoring system costs include the following:

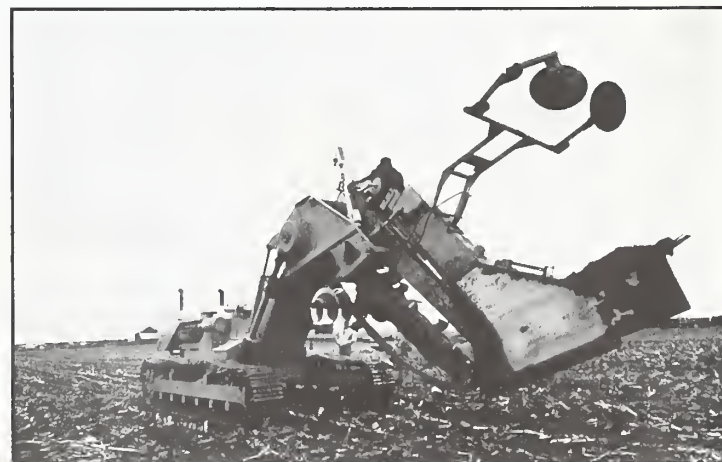
Sony high-resolution "chip" camera (3 CCD)--\$5,170  
 Panasonic 8-inch WORM Player-Recorder (analog)--\$12,500  
 Panasonic 8-inch WORM Player (analog)--\$3,500  
 Ten 8-inch WORM disks (analog)--\$1,300  
 Color Television Monitor (19-inch Sony)--\$700  
 Compaq Deskpro 386-130 Computer--\$7,900  
 C-Quest Photo Indexing Software--\$3,000  
 Iomega Bernoulli Box (20 MB) and controller--\$1,550  
 Bernoulli cartridges (3)--\$270  
 Total--\$35,890



(Above) Larry Park, in the cab, works past sundown to harvest potatoes mechanically on his Presque Isle farm. Theoretically, round potatoes roll to one side of the sloping conveyor belt while flat Maine stones stay put. People make sure it happens that way. Presque Isle, ME, 1975. USDA Photo by George Robinson, No. 041-51-7A.



(Above) Dee Watson (right), Soil Conservation Service district conservationist, discusses stubble mulching with Duane Ellis on the Ellis Farm near Elton, SD. October 1978. USDA/SCS Photo by Gene Alexander, No. SD-883.



This sophisticated farm machine with a space-age appearance digs trenches and lays tile or pipe to drain wet farmland. Depth and slope of the trench are controlled by laser beam. DeKalb, IL, January 1975. USDA Photo by Gordon Baer, No. 050-31-31.



## COMPARISON OF FEATURES AND CHARACTERISTICS OF NAL/FOREST SERVICE AND NAL/OGPA OPTICAL DISKS

### NAL/FOREST SERVICE DISK

#### Access:

Photographs were filmed on 35 mm motion picture film, and transferred to broadcast quality videotape from which a check disk was made for quality control, then a master was made to manufacture analog commercial disks.

#### The creation process:

Creation of the disk using this process was time consuming. The image on a 19-inch monitor was the actual size of the original material.

#### Description:

The NAL/FS Disk has 34,000 photos and the matching database had 34,000 entries. Data was entered in C-Quest Photo Database Software as the pictures were filmed frame by frame on motion picture film, but the location code on the disk could not be added to the database until the final disk was manufactured.

The C-Quest Photo Database Software, with added vocabulary terms, is a fast and powerful reference tool. Users who implement the C-Quest Software will receive a copy of the enhanced NAL/C-Quest Dictionary File for use with NAL optical disks.

#### Searching the disk:

The Forest Service 12-inch Laser Disk may be searched in a limited fashion on a Laser disk player using the 69 chapter subjects index stops on the disk. Images can be identified by the "negative number" on the video image.

Both disks may be rapidly searched using the C-Quest Photo Database System, with access by multiple subjects, photo-grapher, date, location, and other information.

#### Status:

The Forest Service laser disk is ready for distribution.

### NAL/OGPA WORM DISK

#### Access:

Using a high-resolution color video camera, photographs are recorded directly on an analog WORM disk which is immediately usable. Individual duplicates can be made.

#### The creation process:

Imaging on a WORM Optical Disk is very fast and direct with full control over image quality, color and size of the final image on the monitor.

#### Description:

So far the NAL/OGPA WORM Disk has 8,000 photos, the matching database has 8,000 entries, and more than 1,000 are added per month. Pictures are recorded on the WORM disk; a complete database record is created soon thereafter. The combination of picture disk and database are continuously usable during the creation process.

#### Searching the disk:

The OGPA 8-inch Worm disk must be searched using the C-Quest Database. The eventual 12-inch commercial disk will require an accompanying database.

#### Status:

The OGPA disk is new, and the database is still in the building stage, but it is usable, and is currently being used in one remote site during the creation process.



After a day of working in the lettuce fields, Mexican farm workers are bussed back to the Mexican border. Calexico, CA, 1975. USDA Photo by Charles O'Rear, No. 001-18-3.



In 1986 drought in the Southeast severely affected the corn crop. Ears of corn, if they developed at all, usually were badly stunted, as in this example. Washington County, GA, August 1986. USDA Photo by June Davidek, No. 0886D958-24.



## CONCLUSION

The current technological push in the optical laser disk field will be increasingly complemented by an expanded user market demand in the 1990's. New optical laser media formats, including laser cards, laser floppy and bernoulli disks, and laser optical tape will allow convenient storage of incredibly large amounts of data. NAL is actively involved in searching, evaluating, and using optical laser technology on a daily basis. Both staff and researchers at NAL are experiencing improved access, reduced handling of originals, and faster image retrieval. Appropriate utilization of this new technology can provide improved photo and text reference service opportunities not only for USDA users, but also for the users of the broader spectrum of collections of photo images and information on agriculture throughout the world.

## REFERENCES

Andre, Pamela. "Disk Technology Projects at the National Agricultural Library." (December 1987).

Andre, Pamela. "Evaluating Laser Videodisc Technology for Dissemination of Agricultural Information." *Information Technology and Libraries*, (June 1985): 139-147.

Andre, Pamela. "Full Text Access and Laser Videodisc: The National Agricultural Library." *Library Hi Tech*, (Spring 1986): 13-21.

Fusonie, Alan, and William G. Hauser. "The Forest Service Photograph Collection and Laser Disk Technology at NAL." *Agricultural Library Information Notes*, (September 1987) 13(9):1-12, 20.

Hooten, William L. "Status Report on the Optical Image Storage System at the National Archives and Records Administration." *Optical Information Systems Conference Proceedings 88*, (September 7-9, 1988): 128-131.

"Laser Photo Disk Can Aid Farmer." [Interview in] *The Forum*; Fargo, North Dakota (June 4, 1987).

Manns, Basil. "Status of The Library of Congress Document Storage and Retrieval System." *Optical Information Systems Conference Proceedings 88*, (September 7-9, 1988): 132-135.

*NAL-OGPA Laserdisc Project: Statement of Requirements*. (National Agricultural Library, Beltsville, Md.: 1987). 11 pp.

Parker, Elizabeth Betz. "The Library of Congress Optical Disk Pilot Program." *Information Technology and Libraries*, (December 1985): 289-99.

Rice, Philip, and Richard F. Dubbe. "The Development of the First Optical Videodisc." *SMPTE Journal*, (March 1982): 277-284.

Schreiber, William S. "An Optical Media Manufacturer's Perspective on the Optical Storage Market." *Optical Information Systems Conference Proceedings 88*, (September 7-9, 1988): 122-125.

*USDA Laser Disc Photo Project: Summary and Guidelines for Submitting Photographs*. (National Agricultural Library and Office of Governmental and Public Affairs: October 1987).



(Above) Henry Heinz, the founder of International Food Company, stops in a field to talk to the men and women harvesting crops for his factory kitchens. Pittsburgh, PA, about 1900. USDA Photo No. CEN-407.



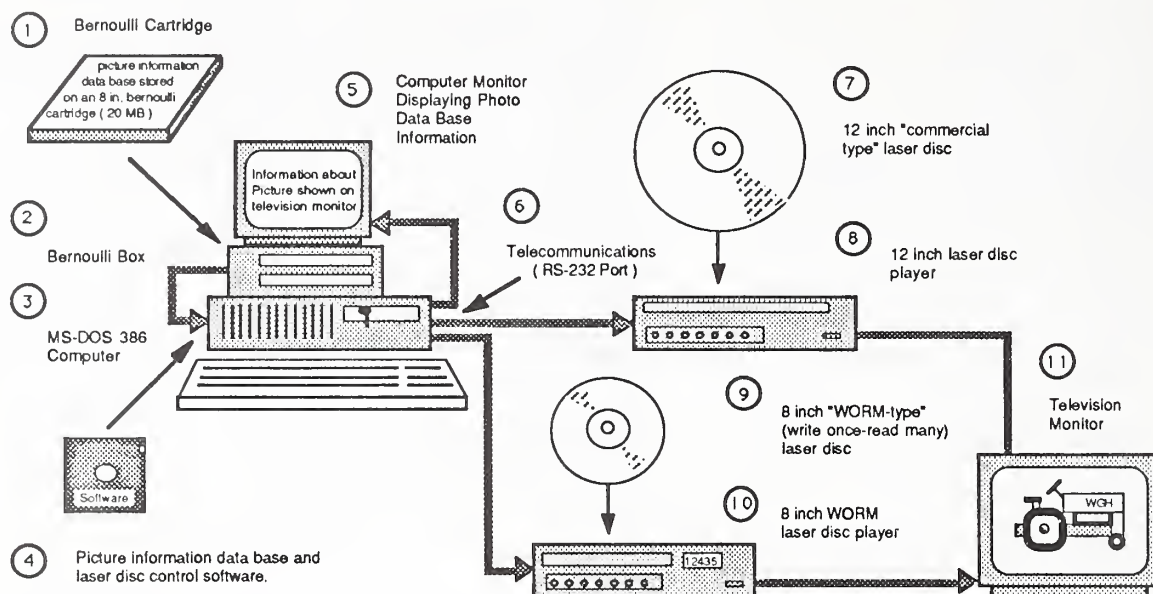
(Above) This picture was part of USDA's centennial photography exhibit, "The Changing Faces of Our Land," for which approximately 1,000,000 photographs from sources throughout the U.S. were reviewed before final selection was made. The exhibit was prepared in 1962 to show the growth and development of the U.S. from 1862 to 1962 with the emphasis on the role of agriculture to the rest of the country. This picture shows a farm family with its sod house. Custer County, NE, about 1887. Contributed by Butcher Collection, Nebraska State Historical Society. USDA Photo No. CEN-37. The disk also contains many of the photos in USDA publications such as "The Face of Rural America" which is "The 1976 Yearbook of Agriculture."



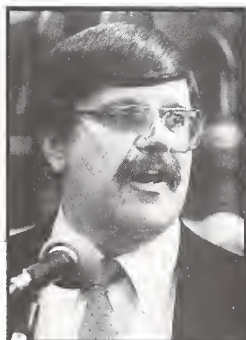
Machinery buried by wind erosion in a barn lot owned by O. N. Olsen, county commissioner of Gregory County, SD. May 13, 1936. USDA/Soil Conservation Service Photo by Sloan, No. SD-5089.



## National Agricultural Library Laser Optical Picture Disc Display System



This system is used at NAL to display laser optical disc photo finding aids: 1) A 20-MB, 8-inch *lomega* bernoulli cartridge containing the data base for the laser disc being viewed; 2) An *lomega* bernoulli box data storage unit; 3) A Compaq Deskpro 386-130 Computer; 4) C-Quest™ Picture Data Base Software; 5) A Computer Monitor to display information about the photo on the television monitor; 6) RS-232 Telecommunications Port; 7) The NAL-Forest Service Photo Collection Laser Disc; 8) A 12-inch laser disc player; 9) An 8-inch, Panasonic WORM Laser Disc; 10) A Panasonic 8-inch WORM Laser Disc Player; and 11) A color television monitor to show the pictures.



USDA photo

A. FUSONIE

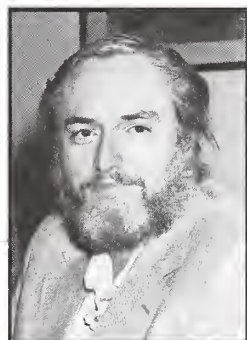


photo: D. Starr

W. HAUSER



photo: D. Starr

A. ROUGH

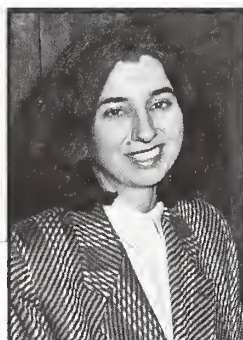


photo: J. Swab

E. GOLDBERG



photo: J. Swab

T. THOMAS

## THE PEOPLE OF THE NAL/OGPA DISK PROJECT

**ALAN FUSONIE:** Head, Special Collections, NAL, and leader in the development of the disk project, is co-author of the lead article in this issue of *ALIN*. He has been on the NAL staff since 1969, as Rare Books Librarian until 1983, and in his present position since then. For a previous profile on Dr. Fusonie, see *ALIN*, 13(9):9, Sept. 1987.

**WILLIAM HAUSER:** Visual Information Specialist, Special Collections, NAL, is NAL Project Manager for this project and co-author of the lead article in this issue of *ALIN*. Mr. Hauser joined the NAL staff in 1985 as curator of the Forest Service Photographs Collection, a position which he had also held with the Forest Service from 1975 to 1985. He was also NAL Project Manager for the Forest Ser-

vice Photographs Disk Project. For a previous profile on Mr. Hauser, see *ALIN*, 13(9):9, Sept. 1987.

**ALAN ROUGH:** Head, Non-Print Media Center, University of Maryland (UM), and UM Project Manager for this project. He was also UM Project Manager for the Forest Service Photographs Disk Project.

**ELIZABETH GOLDBERG:** Head, Special Services Branch, NAL (which includes Special Collections and this project), and Acting Public Affairs Specialist. Ms. Goldberg has been with NAL for 3 years, serving for the first year as head of the Farming and Forestry Reference Branch.

**THEODOSIA T. THOMAS:** Chief, Photography Division, Office of Information, OGPA, USDA, is manager





photo: V. Acosta

C. WESTON



photo: J. Swab

R. YOUNG



photo: D. Starr

J. FAY



photo: J. Swab

P. TAYLOR



photo: J. Swab

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of the staff which provides the original USDA photographs and cataloging data to the staff at NAL where the disk is being created. Ms. Thomas has been in her present position for 4 years, was previously a Visual Information Specialist handling USDA photographic materials and creating audio visual presentations for about 10 years, and has a total of 27 years service with USDA.

**CLAUDIA WESTON:** is Acting Assistant to the Chief, Technical Services Division and also Slavic Librarian in the Cataloging Branch. She has served on the disk project as the advisor and authority for matters related to the subject and descriptive cataloging of the photographs, slides, and other materials being included on the disk. Ms. Weston joined the NAL staff in 1979, and has served since then in the Cataloging Branch.

**RONALD B. YOUNG:** Visual Information Specialist, Special Collections, NAL, has been involved in all aspects of the disk project from image and data entry, to production of special video tapes for marketing and other special purposes. Mr. Young has been in his present position for 3 years, served for 22 years as a Supervisory Library Technician in Lending, and has a total of 33 years of government service, 30 with USDA and NAL.

**JOHN FAY:** one of the principal project workers for putting the images on the disk and cataloging the relevant data into the database since the beginning of the project, is a recent graduate of Catholic University with a Masters in Library and Information Science.

**PATRICK TAYLOR:** one of the principal project workers for both the Forest Service disk and for the current project from its beginning until November 1988. He recently completed his BA in Communication Arts at the University of

Maryland.

**TSUI MEI LIN:** a graduate student at the University of Maryland, Graduate School of Library and Information Service, joined the project in September 1988 and is involved in data and image entry.

**ORLANDO SMITH:** employed through a cooperative agreement between NAL and the Environmental Protection Agency to perform services for EPA, worked on image and data entry for the FS disk and the current one till August 1988 as a volunteer.

**ROBERT HAILSTOCK:** Visual Information Specialist, Audio Visual Productions, and Head of the Photography Library, OGPA, has served for 12 years in the Photography Division. He supervises the day-to-day work of providing photographs and captions to be entered on the disk. He was previously at the Agricultural Stabilization and Conservation Service and has a total of 25 years with USDA.

**BETTY BRANCH:** Photographic Researcher in the Photography Division, reviews news features, slides, slide sets, prints, etc., and sends them to the clientele of the division including those for NAL to be entered on the disk. She has served 10 years in this division and 17 in OGPA.

**EARTHLINE HARRIED:** Photographic Researcher with duties similar to those of her colleague Betty Branch. She has served 3 years in the Photography Division, and 20 in OGPA, the other 17 on publications.

**WILLIAM GUITON:** a recent graduate of Catholic University with a Master of Library and Information Science, has been cataloging and identifying photographs for the Photography Division, preparing them to go to NAL for inclusion on the disk, and on return preparing them for reentry into the Photography Library.



photo: J. Swab

O. SMITH



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E. HARRIED



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W. GUITON

# NAL REGIONAL DOCUMENT DELIVERY AT UCD

by Ted S. Sibia  
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study was undertaken to determine how successful UCD's Shields Library has been in fulfilling requests for the NAL Regional Document Delivery System. The results of the study are tabulated in the box below.

## INTRODUCTION

The University of California at Davis (UCD) is the *Western Regional Resource* for the National Agricultural Library. The NAL Regional Document Delivery System (RDDS) at UCD's Shields Library receives approximately 500 requests per month from researchers and libraries in the Region. Of these requests, about 60% originate from print-outs that scientists receive from the NAL Current Awareness Literature Service (CALs).

For a five-week period during May and June of 1988, a

## NOTES

1. Number or percent filled of the total number of requests received.

2. UCD owns the material, but it is not available. Many of the requests UCD receives are for recent publications, and quite often the Library has not yet received the requested issue of a periodical or a book. Many times these very requests bring to the attention of the UCD library staff the fact that a recent issue or even back issues of materials have not been received for some time. The UCD Library in-

### Five Week Sample of USDA Documents Project

Week of	Number of Requests Rec'd in One Week	Number of Requests Filled <sub>1</sub>	Requests Not Filled (in bindery, in use, not on shelf) <sub>2</sub>	Requests Not filled (Not yet received) <sub>2</sub>	TOTAL <sub>2</sub>	Not Owned <sub>3</sub>	Ordered <sub>4</sub>	Total Requests Not Filled
5-27	155	103	13	2	15	37	0	52
6-3	68	50	15	0	15	3	0	18
6-10	78	56	11	3	14	8	1	22
6-17	147	112	20	7	27	8	0	35
6-24	89	36	17	2	19	34	5	53
Total	537	357	76	14	90	90	6	180

### Percentage Totals

Week of	Number of Requests Rec'd in One Week	Number of Requests Filled <sub>1</sub>	Requests Not Filled (in bindery, in use, not on shelf) <sub>2</sub>	Requests Not filled (not yet received) <sub>2</sub>	TOTAL <sub>2</sub>	Not Owned <sub>3</sub>	Ordered <sub>4</sub>	Total Requests Not Filled
5-27	155	66%	8%	1%	10%	24%	0%	34%
6-3	68	74%	22%	0%	22%	4%	0%	26%
6-10	78	72%	14%	4%	18%	10%	1%	28%
6-17	147	76%	14%	4%	18%	6%	0%	24%
6-24	84	41%	19%	2%	21%	38%	6%	59%
Average %:		65.8%	15.4%	2.2%	17.6%	16.4%	1.4%	34.2%



initiates a claim process as it discovers these missing or late issues.

3. Although this represents the number of requests that could not be filled because the UCD Library does not own the items, it does not reflect negatively on the quality of the collection. There are various reasons why the UCD Library may not own an item requested. In one month alone, there may be many requests for an old issue of a periodical or an item out of scope for the UCD collection. For example, during a two-month period, the UCD Library received 40-50 requests for the periodical *Timberman* (circa 1900), which UCD does not have, and does not plan to acquire. Other examples include requests for periodicals from Third World countries. Most of these titles would not be acquired because of the low demand they would receive at UCD. Some of these journals may also be available at other UC campuses. Introductory books on computers are another example of materials for which the Library receives requests but does not intend to order because they are inappropriate for UCD's research library.

4. Occasionally the UCD Library receives a request for material that is not in the collection and which has not been ordered, but which turns out to be of value. These requests alert the staff to titles that would otherwise have been missed. In cooperation with the patron, the staff gathers information about the publication, obtains a copy, adds it to the UCD collection, and provides the material to the requesting patron. A recent example of this was a request for the publication *Mediterranean Fruit Fly Eradication Project*, published by the Medfly Project, Santa Clara County Agricultural Commissioner and Alameda County Department of Agriculture. The staff was delighted to have this brought to its attention because the publication was very pertinent to the interests of California and UCD. Also, the UCD Library supplied a copy to NAL. Other examples of this type were requests made recently by a scientist for *The Genetic Resources of Vitis*, and *World List of Grapevine Collections* compiled by Professor G. Al-leweldt at Bundesforschungsanstalt für Rebenzüchtung. Both of these publications were very important to the UCD campus because the Library collects at RLG level 5 [i.e., comprehensive] in wine and viticulture. Without the USDA requests the UCD Library may not have known about these publications for a long time.

## CONCLUSION

The study was successful in that it allowed the UCD Library staff to examine not only the success rate of the RDDS, but also the strengths and weaknesses of the collections at UCD libraries as well. In the five-week sample, an average of almost 66% (65.8%) of all requests received were filled, while nearly 18% (17.6%) of the total requests were not filled because the items were in use, not on the shelf, missing, or not yet received. If these two figures are added together,

the libraries at UCD have the impressive potential for fulfilling over 80% of all USDA requests received. Less than 20% (16.4%) of all requests in the sample could not be filled because we did not own the material. As was noted in note number 3 above, many of these requests were for materials which do not fall within the scope of the collections.

The UCD Library plans to make another five-week study in order to verify the accuracy of the May-June sample. In addition, it plans to compare the demand for current and retrospective materials. It is hoped that the data will provide clues to the impact that the unavailability of very current materials (due to their being in use, not yet received, missing, and/or at the bindery) has on USDA patrons as well as UCD's own researchers.



## CHINESE SEEK AG EXPERTISE AT UMES

A search for new ideas in agriculture brought six Chinese to The University of Maryland--Eastern Shore (UMES) on Tuesday, October 18. The delegation from Anhui Province in the People's Republic of China visited the Princess Anne campus as part of a 2 1/2 week tour of North America which will include stops in New York City, Los Angeles, and Canada.

"This kind of interaction across cultural lines is exciting because it can help us expand our work in addressing the issue of world hunger," said Dr. Theodore Mollett, Associate Professor of Animal Science. "This group seemed remarkably able to follow a complex and diverse series of topics."

The six-member delegation was invited by the state of Maryland under its Sister Cities Program. The Chinese are looking for educational exchanges and joint ventures to improve the quality of life in the predominantly agricultural



photo: K. Harting Travers, UMES  
Library Director Jessie Smith (center) watches as her assistant, Mr. Lo Mei-Yiao, demonstrates the library's computerized information retrieval system to a delegation from the People's Republic of China, who came to UMES seeking exchanges and joint ventures.

region west of Shanghai. Home to 52 million people, Anhui Province is limited in its efforts to modernize by a lack of skilled labor and advanced technology.

After being greeted by President William Hytche and Dean of the School of Agricultural Sciences Mortimer Neufville, the group visited microbiology, poultry, nutrition, soybean, and aquaculture research laboratories, saw student computing facilities and the University's library, and met with faculty to discuss ways the School of Agricultural Sciences might assist the Anhui Science and Technology Commission to reach its modernization goals.

"They seemed very interested to learn what we're doing in soybean research, particularly about our harvest index of varieties and our work in breeding for insect resistance," said Dr. Jagmohan Joshi, Director of the Soybean Research Institute. "And I was eager to learn how they use soybean as a human food." Biology Professor Steve Rebach said he found the group particularly intrigued about his work with crabs for aquaculture, inquiring specifically about diet and maintenance techniques.

The group was accompanied by two translators, but language problems seemed to diminish at the tea party which concluded the tour, as the delegation had an opportunity to talk with two Chinese members of the UMES community, Mr. Lo Mei-Yiao, the Assistant Library Director, and Mr. Jiang Hua, a graduate student. The campus tour was arranged by the School of Agricultural Sciences in response to a request from the International Visitors Center in Baltimore, a private, nonprofit organization that assists in arranging sponsored tours for international visitors.

--UMES



## ANDRE PRESENTS NEW TECHNOLOGIES IN CHINA

The International Symposium on New Techniques and Applications in Libraries was held at Jiaotong University in Xi'an, China, September 8-11, 1988. The conference focused on the sharing of experience and expertise relating to the use of technology in libraries. Pamela Andre, Chief of the Information Systems Division at NAL, gave a presentation on Optical Technology at the National Agricultural Library, which was very well received. In fact, NAL was cited by at least two speakers for its significant leadership role in utilizing new technologies for library applications.

The conference included over one hundred participants from seven countries and the topics ranged from the use of CD-ROM to standardizing the translation of western names to Chinese and the impact of technology on library facilities. Many Chinese libraries are actively involved in

automation using both minicomputers and microcomputers. Some are using CD-ROM technology for cataloging western language materials.

In addition to the many interesting technical sessions, the conference included a day of sightseeing around Xi'an. This is a famous ancient city which was the capital for a number of dynasties. Within a few miles of the city is the famous Terra Cotta Army, replicas of over 3,000 soldiers, horses and carriages which were buried in honor of the Emperor Chin. Conference participants had a tremendous opportunity to enjoy ancient Chinese culture as well as learning about current Chinese library practices.

Following the completion of the conference, Ms. Andre was the guest of the Institute for Scientific Information of the Chinese Academy of Agricultural Science in Beijing. During her visit, Ms. Andre spent two days lecturing on various library automation topics to the staff of the library and the researchers at the Institute. Ms. Andre was also pleased to present to the Institute a subscription to the AGRICOLA CD-ROM which was graciously donated by SilverPlatter. It is anticipated that this gift will greatly enhance the Institute's ability to identify and acquire research materials relevant to Chinese agricultural research.

Following her visit to Beijing, Ms. Andre flew to Hainan Island to visit the South China Academy of Tropical Crops as the guest of Mr. Chen Qiubo, who recently completed a year of research at NAL. Ms. Andre lectured on library automation to library staff and then was given a tour of the island which included a visit to an experiment station where research with various export crops is aimed at improving China's foreign trade.

"The trip was busy and varied," said Ms. Andre, "but the highlight of the trip was the experience of seeing the richness of ancient Chinese culture juxtaposed with the energy and enthusiasm of today's culture, especially when working with the computer technology of the late 20th century."



Pamela Andre, Chief, Information Systems Division, NAL, presents a set of AGRICOLA CD-ROM disks and subscription from SilverPlatter to Mr. Jiao Bin, Assistant Director, Sciencetech Documentation and Information Center, Chinese Academy of Agricultural Sciences, Beijing.





**NAL  
Projects  
& Policies**

## **SOIL AND WATER CONSERVATION PROJECT**

by Leslie A. Kulp

Soil and water conservation and water quality are among the foremost concerns of our nation and are critically important to agriculture. In an internal investigation of the topic at NAL, John Smith (student, University of Maryland) and Karl Schneider (Reference Librarian, NAL) briefly reviewed some of the pertinent problems in the United States. They reported:

"One of the major agricultural concerns today is the availability, quality, and management of soil and water resources. These natural resources are the basis for agricultural productivity. Soil and water resources are often taken for granted, yet these resources are not inexhaustible and serious usage complications are now evident threatening the growth and abundance of agriculture and recreation as well as the availability of clean water. Erosion is a major problem on almost one third of this country's tillable soil. It not only causes loss of valuable topsoil and cropland, but also causes pollution of water supplies and fills reservoirs and lakes with sediments, excessive nutrients, and other harmful chemicals. The underground water resources in the Southern Plains and the Southwest are being depleted by overuse. Increased pollution of our water supply results in negative health effects and increased recovery costs to agriculture, industry, and public utilities. It has been estimated that salinity alone will cost the Colorado River Basin 150 million dollars annually by the year 2000. Lastly, much of the increase in agricultural production over the last decade has been brought about by high use of irrigation water at rates that cannot be sustained."

Other areas of the world are experiencing similar problems.

This soil/water problem is becoming more complex and broader in scope. The resources of various institutions are required to provide the informational support needed by researchers, educators and practitioners in this field. For this reason, NAL is considering the initiation of a coordinated program to ensure optimal collection, processing, and availability of information on this topic. This undertaking would include: 1) the identification of organizations and institutions active in this area whether research or applied; 2) the compilation of a list of libraries with research level collections that are widely available; and 3) the development of a world list of core journals together with the sources in

which they are indexed.

As work progresses, NAL would be willing to coordinate a meeting with representatives from interested organizations and institutions to

exchange information and to explore possible means for the development

of a cooperative information system for promoting advancements in water quality and soil and water conservation.

NAL invites comments from the readers regarding this project. Contributions of a general or specific nature are requested whether they consist of data, sources, ideas for the development of this undertaking, etc.; all are appreciated. Please send your comments to:

**Leslie A. Kulp**

*Chief, Collection Development*

*National Agricultural Library, Room 204*

*10301 Baltimore Boulevard*

*Beltsville, Maryland 20705*



## **USING THE CAB THESAURUS TO SEARCH AGRICOLA**

by **Martha Hood**

**Technical Information Specialist**

**Indexing Branch, NAL**

Since 1985, indexing records entered into the National Agricultural Library's AGRICOLA database have been assigned descriptors from the *CAB Thesaurus* to represent the subject content of documents. However, users accustomed to searching AGRICOLA free-text for the previous 15 years have been slow to adopt use of this controlled vocabulary to search the database. This is understandable, but unfortunate, since using CAB descriptors to search AGRICOLA can make their searching both more effective and more efficient.

The Indexing Branch at the National Agricultural Library and its cooperators produce the indexing records which comprise over 80% of the AGRICOLA database. NAL has been working on two fronts since 1985 to make adoption of a controlled vocabulary a success. The first of these fronts has been the thesaurus itself. The *CAB Thesaurus* is produced by CAB International (CABI) (formerly Commonwealth Agricultural Bureaux, a British organization). The Indexing Branch has coordinated submission of numerous proposals to CABI to improve the thesaurus and adapt it to the needs of an American audience. These proposals originated both within NAL (primarily from the Indexing Branch and from what is now the Information Centers Branch) and outside NAL (notably from the USDA Forest Service). Changes proposed include substitutions of American for British spellings and usages, additions of descriptors (including many in subject areas within NAL's scope which are not considered to be within CABI's scope), deletions of synonyms and near-synonyms, modifications of hierarchies, etc.

The second of these fronts has been NAL's indexing with the thesaurus. At least three methods are being used to make this indexing as complete, as consistent, as accurate, and as appropriate as possible. First, a series of publications called *Notes to Indexers* was initiated in January 1986. These short notes clarify existing indexing policies and practices, as well as disseminate new indexing policies and practices. Second, NAL's Indexing Manual, rewritten in late 1984 in anticipation of the adoption of a controlled vocabulary, is in the early stages of a revision that will incorporate insights gained over the past three years. Third, quarterly quality review of each indexer provides opportunities for productive feedback to indexers and discussions among reviewers.

A sample search illustrates how effective these efforts have been. This search was conducted in July 1988 in response to the query, "What information is available on biological control of gypsy moths?" The search was performed using DIALOG through DIALNET. In order to make valid comparisons, DIALOG's LIMITALL command with ranges of DIALOG accession numbers was used to restrict output to the portion of the AGRICOLA database created after the thesaurus was adopted. The search was performed three different ways. Method I was a search using strictly descriptors. The thesaurus was consulted using the most obvious term (BIOLOGICAL CONTROL). Following the tracks of thesaural hierarchical and associative relationships yielded eight descriptors for the biological control concept and one for the organism concept. Method II was a free-text search assuming that AGRICOLA had not adopted the *CAB Thesaurus* (DIALOG's suffix codes were used to simulate a Basic Index without descriptors). Method III was a free-text search on AGRICOLA as it actually is now, i.e., not excluding the descriptor field, but not using the descriptors or the thesaurus per se in planning or conducting the search. The technique used for both free-text searches was that of iteration; a quick search was done with known terms and the results were examined for clues to use in further searching. In calculating costs, time for consulting the thesaurus as well as online and telecommunications charges were considered. The results of these three searches speak for themselves. The *CAB Thesaurus* search is both fruitful and cost-effective.

#### METHOD I -- CAB THESAURUS SEARCH OF AGRICOLA

- Total cost = \$2.98
- Total records = 71
- Relevant records = 71
- Cost per relevant record = \$0.04

#### METHOD II -- FREE-TEXT SEARCH OF AGRICOLA WITHOUT DESCRIPTORS

- Total cost = \$4.13
- Total records = 19
- Relevant records = 19
- Cost per relevant record = \$0.22

#### METHOD III -- FREE-TEXT SEARCH OF AGRICOLA WITH DESCRIPTORS

- Total cost = \$7.42

- Total records = 105
- Relevant records = 74
- Cost per relevant record = \$0.10

Many of the reasons for using a controlled vocabulary are exemplified in this search. A controlled vocabulary can facilitate precise searching. One of the precision techniques made possible by using a thesaurus is related to its inclusion of precoordinated descriptors. Two that were used to good effect in this search were PARASITES OF INSECT PESTS and PREDATORS OF INSECT PESTS. A controlled vocabulary can facilitate comprehensive searching. In this case use of both associative and hierarchical relationships in the thesaurus contributed to a more comprehensive search: BIOLOGICAL CONTROL led to one of its rt's (related terms), BACTERIAL INSECTICIDES; BACTERIAL INSECTICIDES, in turn, led to one of its NT's (narrower terms), BACILLUS THURINGIENSIS. A controlled vocabulary facilitates consistent searching by controlling synonyms and quasi-synonyms. In this search, it was necessary only to enter the scientific name of the gypsy moth, LYMANTRIA DISPAR; it was not necessary to search using the common name or one of the synonymous Latin names of this pest. Finally, a controlled vocabulary facilitates economical searching by shifting costs from the output (searching) stage to the input (indexing) stage of information retrieval systems. The cost-effectiveness of searching with the thesaurus was clearly demonstrated in this sample search. This benefit will be realized, however, only if searchers use the controlled vocabulary when they search!

As of October 17, 1988, AGRICOLA includes nearly a third of a million (319,774) indexing records carrying CAB descriptors; approximately 100,000 are being added each year. These records are also desirable in that they are, of course, the most current. Clearly, it is to the advantage of users of AGRICOLA to exploit the *CAB Thesaurus* when searching this substantial portion of the database.



## NAL VIDEO ON "IVEN SHAREDISC"

The National Agricultural Library's video, *For Your Information...*, an overview of the Library's mission and services is included in a new 12 inch videodisk set produced by the Interactive Video Extension Network (IVEN) under the direction of Thomas G. Tate, of USDA's Extension Service. Second in a series of videodisks, the *IVEN Sharedisc II* contains both still and moving images of interest to many in the agricultural and extension communities. Highlights of the two disks include plant disease slides from the University of Minnesota Department of Plant Pathology, plant identification slides from the University of Florida Agricultural Engineering Department, as well as numerous university and Extension Service program descriptions.

A copy of the videodisk set is available for viewing in the Special Collections Branch of the National Agricultural Library, Room 1402.

The set is also available for purchase and is priced at \$200. It requires only a videodisk player to run. Orders may be placed with Image Premastering Services, 1781 Prior



Avenue North, St. Paul, Minnesota 55113. Telephone: (612) 644-7802.

For additional information contact:

Thomas G. Tate  
Extension Service, USDA  
Communication Information Technology  
South Agriculture Building, Room 3328  
14th & Independence, SW  
Washington, DC 20250-0900

Or call (202) 447-8155.

--Pamela Mason

## UNITED STATES AGRICULTURAL INFORMATION NETWORK

by Sarah E. Thomas  
Chief, Technical Services Division

On October 26 -27, 1988, the officers of the agricultural libraries and information network assembled at the National Agricultural Library to work out details of the new organization. The officers of the as yet unnamed cooperative group are Nancy Eaton, Director of Libraries, University of Vermont, President; John Beecher, Director, North Dakota State University, Vice-President; Carol Boast, Agriculture Librarian, University of Illinois, Secretary; and Melvin George, Director of Libraries, Oregon State University, Treasurer. While at NAL the elected representatives of the organization met with NAL Director Joe Howard, Network Liaison, Sarah Thomas, and other members of NAL's staff. Chief among their concerns was the outlining of a structure for the network, whose primary goal is to provide a forum for discussion of agricultural information issues.

During the two-day meeting, the Board composed bylaws for the fledgling organization, and prepared a timeline for their implementation. The officers have the rather formidable task of specifying an association that has long existed informally, but whose exact shape is difficult to define. In the draft bylaws that have been developed for distribution and comment by potential participants, provision has been made for three categories of members: institutional, individual, and non-voting associate. The voting members will elect seven representatives for two-year terms to a Council, from which in turn the officers will be elected. As the bylaws are presently drafted, the Council will be composed of three institutional representatives coming from land grant universities, two other institutional representatives, and two members at large nominated from the individual member category. The Director of the National Agricultural Library will be an ex officio member of the Council. Three standing committees, Nominating, Legislative and Government Relations, and Telecommunications and Networking, were proposed, and interest groups for collection development, bibliographic control, resource sharing, and education and training were also planned. To accommodate the diverse

constituency, the group recommended holding business meetings at both the American Library Association and the Special Libraries Association annual meetings, to be followed by a mail ballot. Program meetings were targeted for at least every three years. Once the basic structure of the network had been sketched out, the group turned its attention to a name, and arrived at the recommendation that the organization be called the United States Agricultural Information Network.

The next phase in the genesis of the agricultural libraries and information network will be the review of the proposed bylaws by potential members. Bylaws will be distributed widely for comment in early 1989, and interested agricultural librarians and information specialists will have an opportunity to discuss their evolution and the shape of the fledgling organization during Open Houses scheduled for January 6 and 11, 1989 at the National Agricultural Library. In addition, both Joe Howard and Nancy Eaton will be present at the annual meeting of the Special Libraries Association in New York in June to respond to comments made by agricultural librarians attending that meeting. Later in 1989 the bylaws will be revised to incorporate suggestions arising out of these discussions, and a membership drive will commence. In the current timetable, an election of Council representatives will take place in April 1990, and new officers will begin their terms on July 1, 1990.



## NETWORK MEETS AT ALA MIDWINTER

The newly formed United States Agricultural Information Network will meet at the American Library Association Midwinter Meeting in Washington, DC. The meeting will be held on Tuesday, January 10, 1989, from 2:00 to 4:00, in the Georgetown East room of the Hilton Hotel, 1919 Connecticut Avenue, N.W. The agenda will consist of the matters discussed in the article by Sarah Thomas on this page of *ALIN* and items placed on the agenda by meeting participants.



## EXPERT SYSTEMS: SPREADING THE WORD

October was a very busy month for spreading the word about expert systems at NAL. Associate Director Sam Waters gave numerous talks on the topic, starting with a presentation at a USDA Graduate School course on "New Information Technology in Libraries," followed by a speech at the ONLINE '88 Conference and Exposition, in New York City on October 11. Mr. Waters also offered a half-day tutorial on expert systems at the Fourth Conference on Applications of Artificial Intelligence and CD-ROM in Education and Training, October 25 in Arlington, Virginia, and also spoke on "Expert Systems in the Educational Environment" at the EDUCOM conference in Washington, D.C., on October 28.





## New Bibliographies

The bibliographies in the *Quick Bibliography* series are primarily computerized online as batch bibliographies emanating from searches performed by the NAL Public Services Division Staff in response to customer requests. Searches are selected for inclusion based on the currency of the topic, interest among clientele, and probable value to a larger audience. Beginning in October 1988, all **QB's** will include search strategies. Unless otherwise specified, citations are from AGRICOLA.

The other bibliographic series, including *Special Reference Briefs*, have been researched and produced to meet special needs of clientele of the Library and its Information Centers. Revisions or updates will be announced when produced. Only one copy of a requested title will be sent; however, requesters may make copies. To request a copy of a *Quick Bibliography*, *Special Reference Brief*, or other bibliographic work, circle the desired title(s) below and send your request with a self-addressed label to:

Reference Branch, Room 111  
National Agricultural Library  
Beltsville, MD 20705

## QUICK BIBLIOGRAPHIES

**Q.B.--89-01.** Plastic Mulches, 1979-June 1988. 179 citations; English only. Prepared by Evelyn A. Brownlee. October 1988.

**Q.B.--89-02.** Nonpoint Source Pollution January 1984-August 1988. 179 citations; English only. Prepared by Jayne T. MacLean. November 1988. Updates 87-65.

**Q.B.--89-03.** Ethical and Moral Issues Relating to Animals 1979-[August?] 1988. 270 citations; languages: none excluded. Prepared by Karen J. Clingerman. November 1988.

**Q.B.--89-04.** Biotechnology: Gene Expression in Molds, Yeasts and Higher Plants 1987-[August?] 1988. 350 citations; languages: none excluded. Prepared by Jean Larson and Suzanne Nanis. November 1988. Updates 88-19.

**Q.B.--89-05.** Biotechnology: Ti-plasmid and other plant gene vectors 1985-[August?] 1988. 387 citations; languages: none excluded. Prepared by Jean Larson and Suzanne Nanis. November 1988. Updates 86-63.

**Q.B.--89-06.** Biotechnology: Plant Protection, 1986-[August?] 1988. 368 citations; languages: none excluded. Prepared by Jean Larson and Suzanne Nanis. November 1988. Updates 86-62.

**Q.B.--89-07.** Animal Models of Disease 1979-August 1988. 156 citations; languages: none excluded. Prepared by Janice C. Swanson. November 1988.

**Q.B.--89-08.** Composts and Composting of Organic Wastes January 1979-August 1988. 298 citations; English only. Prepared by Jayne T. MacLean. November 1988. Updates 87-41.

**Q.B.--89-09.** Stress in Swine 1979-August 1988. 340 citations; languages: none excluded. Prepared by Janice C. Swanson and Jean Larson. November 1988. Updates 89-09.

**Q.B.--89-10.** Nuclear Magnetic Resonance Studies in Plant Science January 1984-October 1988. 315 citations; languages: none excluded. Prepared by Suzanne Nanis. November 1988.

**Q.B.--89-11.** Beekeeping in the United States January 1979-August 1988. 180 citations; English only. Prepared by Carol Kopolow. November 1988. Updates 84-53.

**Q.B.--89-12.** Tilapia Culture January 1979-August 1988. 227 citations; languages: none excluded. Prepared by Mona F. Smith. December 1988. Updates 87-45.

**Q.B.--89-13.** Seed Collecting and Processing January 1979-September 1988. 212 citations; English only. Prepared by Henry Gilbert. December 1988.

## SPECIAL REFERENCE BRIEFS

**S.R.B.--89-01.** Salmonellosis in Laboratory Animals. Prepared by Kevin P. Engler. October 1988.

**S.R.B.--89-02.** The Draize Eye-Irritancy Test. Prepared by Janice C. Swanson. November 1988.

## OTHER BIBLIOGRAPHIES

**AQUA-TOPIC:** Spirulina: Food For The Future. Prepared by Linda Braun. October 1988.

**Animal Welfare Legislation:** Bills and Public Laws, 1980 to October 1988. (Includes the Animal Welfare Act and its amendments). Prepared by Karen Clingerman, Sean Gleason and Janice Swanson. October 1988.

**An Annotated Bibliography of Selected Materials Concerning the Philosophy of Animal Rights.** Prepared by Sean J. Gleason and Janice C. Swanson. October 1988.

**Aquaculture Journals at the National Agricultural Library.** Prepared by Michelle E. Foster and Deborah T. Hanfman. October 1988.

**Horticultural Journals Currently Received at the National Agricultural Library.** Prepared by Jane Potter Gates. October 1988.





# 1986 QUICK BIBLIOGRAPHIES

Limited numbers of the following *Quick Bibliographies* are still available for distribution. Readers may request them in the same manner as current items from the address given on the previous page. Although some of these have been updated, the older bibliographies contain material not included in the update.

QB #	TITLE	AMOUNT	UPDATE
86-01	Embryo transfer	56	87-33
86-02	Wood fuel	68	
86-03	Ecology of tropical rain forests	75	
86-04	Pink bollworm	180	
86-06	Grasshopper control	132	
86-10	Potential new crop: Cuphea	91	
86-11	Potential new crop: Guayule	42	88-57
86-14	Potential new crop: Vernonia	102	
86-15	Potential new crop: Lesquerella, Lunavia, Sarium s., & Stokesia	70	
86-20	Urban horticulture	65	88-20
86-25	Urban forestry	71	88-06
86-26	Herb gardening	46	
86-29	Impact of global economics on ag trade	170	
86-30	Agricultural legislation	110	
86-31	Economic risk management in agriculture	130	
86-39	Cassava ( <i>Manihot esculenta</i> )	165	
86-42	Quinoa, high fiber, high protein grain	30	
86-44	Potential new crop: Rapeseed	41	
86-45	Guar for industry, food & feed	172	
86-49	Parthenogenesis	256	
86-50	Earthworms: raising, uses, beneficial aspects	52	88-77
86-51	Expert systems and computer aids to decision making	95	
86-54	Alar, widely used growth regulator	122	
86-55	Water conservation: theory, practice, results	87	
86-56	Forage legumes	170	88-71
86-58	Drip and trickle irrigation	75	87-68
86-59	Social, structure and technological changes in agriculture	147	
86-60	World grain trade	153	
86-61	Reforestation and afforestation of disturbed lands	121	
86-65	Electronic marketing and market simulation	154	
86-69	World tobacco outlook	132	
86-71	Farmer to consumer markets	255	
86-72	Grain transportation	30	
86-73	Agroforestry	47	88-70
86-74	Air pollution: affects on crops & forest	65	
86-75	Wastewater irrigation	79	88-55
86-77	Nuclear fallout effects on agriculture	157	
86-78	Double cropping and interplanting	62	87-66
86-79	Appropriate technology for rural development	87	
86-81	Soil science history	207	
86-82	Global warming and the greenhouse effect	69	88-73
86-83	Cotton trade outlook	187	
86-84	Sunflower production	151	

## SURPLUS DAIRY JOURNAL

*Journal of Dairy Science*, Vols. 31-70, 1948-87, complete, unbound. Available to any library that will pay shipping. Contact:

L. J. Bush

Animal Science

Oklahoma State University

Stillwater, OK 74078

Or call: (405) 744-6062

## GASGA WORKSHOP ON POSTHARVEST INFORMATION MANAGEMENT

The Group for Assistance on Systems relating to Grain After Harvest (GASGA) and the Postharvest Documentation Service Food and Feed Grains Institute will present a Workshop on Postharvest Information Management at Kansas State University, Manhattan, Kansas, April 17-19, 1989. The purpose of the workshop is to provide a forum where representatives from international postharvest centers will be able to address the following information management issues:

- Information/documentation needs of postharvest projects.
- The role of the information manager in agricultural assistance.
- Microcomputers as networking tools for postharvest centers.
- Agricultural databases for postharvest research.

The workshop will consist of individual presentations and round-table discussions on the above topics. Simultaneous translation from English to Spanish and French will be provided.

Attendance at the workshop is limited to a maximum of 60 participants. There is no registration fee for the workshop. In order to attend, please register NO LATER THAN FEBRUARY 1, 1989, by mailing your name, position, institution, address, telephone and telex numbers, and, if applicable, an indication of interest in presenting a paper, to:

GASGA Workshop

Postharvest Documentation Service

Farrell Library

Kansas State University

Manhattan, Kansas 66506 USA

Or telex the information to:

GASGA Workshop

Food and Feed Grains Institute

TWX 5106000752 KSU GRAINS



# BIOTECHNOLOGY INFORMATION CENTER BIBLIOGRAPHIES AND AUDIO/VISUALS

One of the main responsibilities of the Biotechnology Information Center (BIC) staff is to provide information retrieval services on all aspects of agricultural biotechnology to Library patrons. These services can range from xeroxing a copy of a hard-to-find journal article, to online computer database searching. To provide this information, the BIC staff relies mainly on the NAL biotechnology collection which includes a wide array of biotechnology resources such as monographs, serials, *Quick Bibliographies (QB's)*, *Special Reference Briefs (SRB's)*, newspapers and audiovisuals. Below is a list of the audiovisuals related to biotechnology currently available from NAL. For information on borrowing any of the listed items, contact BIC at the address or telephone number below.

The Center has recently added a new in-house SRB, "Biotechnology: Methodologies Involved in the Production of Transgenic Animals," (SRB 88-10) to its collection. Another SRB, tentatively titled "Field Release of Genetically Engineered Organisms," is in progress. In addition, the staff is preparing a series of bibliographic publications on the applications of nuclear magnetic resonance (NMR) in agriculture. Currently, the areas include animal science, plant science, soil science, human nutrition, entomology, forestry, and food science/products. All of the publications mentioned here are/will be available free of charge to any individual. Requests or inquiries may be referred to:

Biotechnology Information Center  
National Agricultural Library, Room 301  
10301 Baltimore Boulevard  
Beltsville, MD 20705

Or call: (301) 344-3218 or 344-1215.

--Suzanne Nanis, Technical Information Specialist

## AUDIOVISUALS RELATED TO BIOTECHNOLOGY AT NAL

*Biotechnology: Breaking New Ground.* North Carolina Biotechnology Center, 1987. NAL Videocassette #243 (VHS; 14:00 minutes).

This describes the first field release study of a genetically engineered plant in North Carolina. CIBA-GEIGY conducted this research project and attempted to engineer tobacco plants genetically resistant to atrazine. The film explains the rationale behind the project, its implementation, and the outcome.

*Biotechnology Serving Human Needs.* Industrial Biotechnology Association, 1988. NAL Videocassette #292 (VHS; 17:38 minutes).

This provides general coverage of the biotechnology industry and potential applications of biotechnology in the

fields of medicine and agriculture. It attributes the rapid increase of biotechnology to the recent advances in recombinant DNA and monoclonal antibody techniques, examples of which are presented and explained.

*The Chemical Engineer and Biotechnology.* Produced for the American Institute of Chemical Engineers by the Monsanto Co., 1985. NAL Videocassette #201 (3/4" U-Matic; 9:58 minutes).

This presents on-site interviews with chemical engineers working in biotechnology. It discusses common job responsibilities for engineers in the areas of research and development, process development, process design, and manufacturing.

*A Genetic Engineering Approach to the Design of Non-Nitrite Curing Agents.* USDA Food Safety and Inspection Service, Technology Transfer and Assessment Staff, October, 1986. NAL Videocassette #266 (VHS; length not indicated).

This is a seminar presented by Dr. J. N. Hansen, Department of Biochemistry, University of Maryland, discussing traditional methods of food preservation and potential methods that can be developed using biotechnology and recombinant DNA technology.

*Hitting the Targets: The Production of Lean Beef.* USDA Food Safety and Inspection Service, Technology Transfer and Assessment Staff, October, 1986. NAL Videocassette #199 (VHS; length not indicated).

This is a seminar presented by Dr. H. Russell Crosa, Department of Animal Science, Texas A&M University, discussing consumer responses to polls and questionnaires concerning the fat content of beef. It examines the various methods that retailers have used to adjust to consumer demands. It briefly mentions the use of biotechnology to produce leaner meat.

*Inspection and Labeling Aspects of Genetically Engineered Food Animals.* USDA Food Safety and Inspection Service, Technology Transfer and Assessment Staff, February, 1985. NAL Videocassette #274 (VHS; length not indicated).

This is a seminar presented by Dr. D. Jones, USDA Office of Biotechnology; it examines some of the legal and regulatory questions of labeling genetically engineered animals that may, in the future, be produced and raised for food.

*Introduction of Foreign Genes into Livestock.* USDA Food Safety and Inspection Service, Technology Transfer and Assessment Staff, June, 1986. NAL Videocassette #265 (VHS; length not indicated).

This is a seminar presented by Dr. R. Wall, USDA-ARS Reproduction Physiology Laboratory, discussing the introduction of foreign genes into sheep and pigs to increase feed efficiency.

*The Nature of Change.* The Monsanto Company, 1984. NAL Videocassette #202 (3/4" U-Matic; 17:00 minutes).

This discusses the limitations of traditional plant and animal breeding and the possibilities of overcoming these



limitations using recombinant DNA technology. The uses of *Agrobacterium tumefaciens* for the improvement of crop plants, and the use of bovine growth hormone to increase milk production in cows are examples.

*Of the Earth: Agriculture and the New Biology.* Industrial Biotechnology Association, 1986. NAL Videocassette #137 (3/4" U-Matic; 28:30 minutes).

Scientists comment on the applications of biotechnology to agriculture. The scientists stress the idea that in order to become more efficient producers, the agricultural community must switch from traditional breeding techniques which take time and are limited by species, to recombinant DNA techniques which are faster and not limited by species. It includes some discussion of the current debate on the field testing of genetically engineered organisms.

*The Plum Island Animal Disease Research Center.* USDA Food Safety and Inspection Service, Technology Transfer and Assessment Staff, February, 1985. NAL Videocassette #273 (VHS; length not indicated).

This is a seminar presented by M. Barbeito, USDA-ARS National Program Staff, which gives an overview of the Plum Island Center and the biosafety containment facilities and practices that are in place there.

*The Quinolones--Mechanisms of Action.* Intermedia Communications, Inc., April, 1986. NAL Videocassette #240 (VHS; 17:00 minutes).

This is a technical discussion of the bactericidal action of the quinolones. Unlike other antibiotics, the quinolones function as a DNA gyrase inhibitor which disrupts the ability of the bacterial cells to replicate chromosomal DNA. The quinolone enoxacin is used as a representative example.

*The Techniques in Genetic Engineering Video Library.* IRL Press Video, 1984. NAL Videocassette #23 (3/4" U-Matic) or Videocassette #72 (VHS).

This is an eight-tape series consisting of the following volumes:

- 1) Nucleic Acids Techniques--An Overview (26:05);
- 2) Gene Analysis and Southern Blotting (28:06);
- 3) DNA Sequencing Using M13 (30:00);
- 4) Gene Libraries (25:09);
- 5) Expression of Cloned Genes (28:42);
- 6) Oligonucleotides -Synthesis and Use (22:43);
- 7) In Vitro Mutagenesis (29:02);
- 8) Microdissection and Microcloning (16:39).

Each of these tapes consists of a narrative describing basic recombinant DNA techniques along with a corresponding demonstration by laboratory workers at the bench. The tapes are appropriate for individuals with a science background who are interested in an introduction to the techniques of genetic engineering.

*Transgenic Farm Animals.* Food Safety and Inspection Service, Technology Transfer and Assessment Staff, December, 1986. NAL Videocassette #264 (VHS; length not indicated).

This is a seminar presented by Dr. D. Bolt, USDA-ARS Reproduction Physiology Lab, describing the methodology

and results of a research project in which a foreign growth hormone gene was transferred into pigs by microinjection of the gene into the pronuclei of a female's egg.

*21st Century Explorers.* United States Department of Agriculture, 1987. NAL Videocassette #245 (3/4" U-Matic; 20:00 minutes).

This is a discussion of the importance of science and technology in agriculture today and the need for continued progress in the future. It emphasizes the uses of technology in agriculture such as robots to assist in determining the nutritional value of food, remote sensing to detect water pollution, and biotechnology protocols to produce disease resistant peaches.



## New Serials Received at NAL

*Annual Report / Consultative Group on International Agricultural Research.* Washington, DC: The Group. a. 1984-

S539.5.C6

*Annual Report, the University of Maryland Agricultural Programs.* [College Park, MD]: University of Maryland. a. 1987-

S71.U5

*Annual Review of Plant Physiology and Plant Molecular Biology.* Palo Alto, Calif.: Annual Reviews Inc. a. Vol. 39 (1988)-

QK1.A57

*BT catalyst / North Carolina Biotechnology Center.* Research Triangle Park, NC: The Center. m. Vol. 1, no. 1 (Nov. 1987)-

TP248.B72

*Computers in Forestry Series / Forest Resources Systems Institute.* Florence, AL: Forest Resources Systems Institute. Publication #2- 1984-

SD381.5.C65

*Delectus seminum ex Horto Cantabrigiensis Academiae ad mutuam commutationem propositorum.* Cambridge, England: University Botanic Garden. a. 1981-

QK73.G7C35

*Farm Business Summary for East Central Iowa.* Ames, Iowa: Iowa State University of Science and Technology, Cooperative Extension Service. a. 1961-

275.29 I9C6

*Fishery Statistics of the United States [microform] / United States Department of the Interior, Fish and Wildlife Service.*

Washington: Government Printing Office. a. 1940-  
**Fiche S-120**

*Growth, Development, and Aging: GDA.* Bar Harbor, ME: Growth Pub. Co. q. Vol. 52, no. 1 (spring 1988)-  
**QH511.G6**

*Historical Water Levels Summary to...Atlantic Provinces = Sommaire chronologique des niveaux d'eau jusqu' à...Provinces de l'Atlantique.* Ottawa: Inland Waters Directorate, Water Resources Branch, Water Survey of Canada. Triennial. 1976-  
**GB708.M37H5**

*IDF Mastitis Newsletter.* Brussels, Belgium: International Dairy Federation. No. 6 (Feb. 1982)-  
**SF967.M3M4**

*International Process and Materials Quality Evaluation Conference.* Atlanta, GA: TAPPI Press. 1986-  
**TS1080.I57**

*Lucrari stiintifice / Institutul de Cercetare, Proiectare si Inginerie Technologica pentru Masini si Utilaje Agricole.* Bucuresti: Redactia de Propaganda Technica Agricola. Vol. 20- 1982-  
**S671.I52**

*National Crop Improvement Conference.* Addis Ababa: Institute of Agricultural Research. a. 12th (1981)-  
**SB87.E8I5**

*Nauchno-tekhnicheskii biulleten' Vsesoiuznogo nauchno-issledovatel'skogo insitituta maslichnykh kul'tur.* Krasnodar [R.S.F.S.R.]: Institut. 1981, vyp. i-  
**SB298.5.R9B5**

*Nihon zenkoku shoshi shukanban = Japanese National Bibliography Weekly List.* Tokyo, Japan: Kokuritsu Kokkai Toshokan. w. -1987-50 = no. 1621.  
**Z3301.N5**

*Nonwovens Conference.* Atlanta, GA: TAPPI Press. a. 1986-  
**TS1828.N63**

*Pakistan Journal of Agricultural Social Sciences: Bi-Annual Journal of Pakistan Agricultural Research Council, Islamabad.* [Islamabad, Pakistan: Directorate of Publications, Pakistan Agricultural Research Council. s-a. Vol. 1, no. (July-Dec. 1986)-  
**HD2075.5.P35**

*Paper Synthetics Conference.* Atlanta, GA: Technical Association of the Pulp and Paper Industry. a. 1980-  
**TS1109.T27**

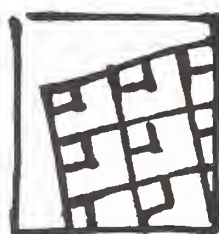
*Pork talk / Division of Animal Production, Department of Agriculture, New South Wales.* Seven Hill, [N.S.W.]: The Department. q. Vol. 1, no. 1 (Oct. 1986)-  
**SF396.A8P67**

*Research Briefs.* University Park, PA: School of Forest Resources, The Pennsylvania State University. Vo. 1, no. 1 (Spring 1966)-v. 16, no. 2 (Fall 1983).  
**SD1.R4**

*Sborník UVTIZ.* Potravinárské vedy. Praha: Československá akademie zemědělská, Ústav vedeckotechnických informací pro zemědělství. q. Roc. 1, 1 (září 1983)-  
**TP368.S26**

*Seriia 3, Biologiia.* Leningrad: Izd-vo Leningradskogo universiteta. q. 1986, 1 (fevr. 1986)-  
**QH301.S47**

*Zernovye kultury.* Moskva: VO "Agropromizdat". b-m. 1988, no. 1 (ianv./fevr. 1988)  
**SB183.Z4**



## Agriculture Datebook

**January 8-12: American Farm Bureau Federation 70th Annual Meeting.** San Antonio, TX. Contact: AFBF, (312) 399-5700.

**January 8-12: International Plant Biotechnology Network.** Nairobi, Kenya. Contact: Julie Ketchum, TCCP Dept. of Botany, Colorado State University, Ft. Collins, CO 80523. (303) 491-1813.

**January 9: Ruminant Health-Nutrition Conference.** Syracuse, NY; Carrier Circle Holiday Inn. Contact: Eastern Federation of Feed Merchants, Inc., 427 Kenwood Ave., Delmar, NY 12054.

**January 9: Symposium on Corn-Based Degradable Plastics.** W. Des Moines, IA; University Park Holiday Inn. Contact: Iowa Corn Promotion Board, Suite 306, 1200 35th St., W. Des Moines, IA 50265.

**January 9-13: International Safflower Conference.** Hyderabad, India. No contact available.

**January 11-13: National Turkey Federation 51st Annual Convention.** New Orleans, LA; Sheraton New Orleans and Towers. Contact: NTF, (804) 435-7206.

**January 14-19: American Association for the Advancement of Science (AAAS) Annual Meeting.** San Francisco, CA. Contact: AAAS Meetings Office, 1333 H St., N.W., Washington, DC 20005.

**January 18-21: American Sheep Industry Convention.** Las Vegas, NV. Contact: ASIC, 200 Clayton Street, Denver, CO 80206.

**January 20-27: UCLA Molecular Biology Symposium.** Frisco, CO. Contact: (213) 206-6292.

**January 21: American Beekeeping Federation Annual Convention.** Indianapolis, IN. Contact: (202) 447-3656.

**January 22-25. Annual Meeting of the National Council of Farmer Cooperatives.** Honolulu, HI. Contact: (202) 653-6976.







## Publications Exchange

### SERIAL GAPS

The National Agricultural Library identifies gaps in the national collection through collection maintenance activities and patron requests. We appreciate your donation of the following publications needed to complete collections. If you have questions, call Ruth Finnblade, Gift and Exchange Program, (301) 344-1207.

Send items to:

National Agricultural Library  
Gift and Exchange Program/RF, Room 002G  
10301 Baltimore Boulevard  
Beltsville, MD 20705

*Biochimica et Biophysica Acta (Bioenergetics Section)*. Vol. 891 (1), and 895 (2-3), 1987.

*Information Series*. Forest, Wildlife and Range Experiment Station, University of Idaho. 1975 (1-5, 8).

*Sabrao Journal*. Vol. 16 (2), 1984.

*Soviet Agricultural Sciences*. 1982 (7-12); 1983 (1-9).

### SURPLUS PUBLICATIONS

The National Agricultural Library will make available the following surplus publications to any interested organization that regularly sends free publications to NAL, including most Federal, land-grant, and agricultural research institutions as well as many others. Foreign institutions will need to provide a U.S. mailing address or make other special arrangements with U.S. sources for shipment of material. Listed titles may be requested up to six months following announcement.

If interested, please enclose an addressed label with your request and write to:

National Agricultural Library  
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10301 Baltimore Boulevard  
Beltsville, MD 20705

Or call Ruth Finnblade, (301) 344-1207.

*American Economic Review*. Vol. 54-58, 1964-68.

*American Journal of Botany*. Vol. 51, 54-59, 1964-72.

*Brittonia*. Vol. 17-27, 1966-75.

*Crop Science*. Vol. 8-26, 1968-86.

*Harvard Business Review*. Vol. 39-57, 1961-79.

*Journal of Animal Science*. Vol. 58-61, 1984-85.

*Journal of Dairy Science*. Vol. 45-69, 1962-86.

*Journal of Heredity*. Vol. 52-65, 1961-74

*Lives of Game Animals*. Vol. 1-4, 1929.

*Paper Trade Journal*. Vol. 100-125, 1935-47.

*Proceedings*. Soil Science Society of America. Vol. 32-39, 1968-75.

*Soil Science Society of America Jour.* Vol. 40-51, 1976-87.

*Soils and Fertilizers*. Vol. 21-22, 1958-59.

*Southern Economic Journal*. Vol. 29-37, 1962-71.

*Wildlife Monographs*. 1958-77.

### SURPLUS PUBLICATIONS IN RUSSIAN

*Descendants of the Bankiva Chicken*. Moskva, 1983.

*Durum Winter Wheat*. Kishinev, 1983.

*Dynamics of the Vertical Distribution of Pelagic Animals*. Moskva, 1986.

*Economics and Management in Agricultural Construction*. Moskva, 1988.

*Economics and Organization of the Production of Perennial Grass Seed*. Moskva, 1983.

*Feeding of Poultry*. Moskva, 1987.

*The Human Factor: Communists from Ilich Collective Farm*. Moskva, 1987.

*Ketosis in Highly Productive Cows*. Moskva, 1983.

*Labor Collective on a Collective Farm*. Moskva, 1987.

*Photosynthesis and Organic Acids*. Leningrad, 1988.

*Psychological Research of Personal Contact*. Moskva, 1985.

*Reliability of Analysis of Mined Rocks*. Moskva, 1985.

*Spruce (Picea Dietr.)*. Moskva, 1983.

*Taxonomy and Biology of Plant Nematodes*. Moskva, 1984.



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Joseph N. Swab, Editor.

Idalia Acosta, New Serials Editor.

Ruth Finnblade, Publications Exchange Editor.

Daniel Starr, Photographer.

[(301)-344-3937]

These two photographs are among those incorporated into the NAL/OGPA optical laser disk discussed in the article beginning on the first page of this issue of *ALIN*. (Left above) This picture shows a cucumber harvester used to facilitate hand picking of cucumbers or other low-growing crops, such as strawberries. Teen-age boys and girls lie on padded boards and place harvested cukes on a moving belt for concentration in center bins. Skagit County, WA, July 30, 1968. USDA/SCS Photo by A. F. Harms, No. WN-90392. (Left below) James Crane, Delaware County Agricultural Stabilization and Conservation Service (ASCS) Office Manager, presents a puppet show to one of several 6th grade classes during a conservation field day for 6th graders in that county. The Soil Conservation Service (SCS) also participated in this conservation education field day. Bear Spring Game Management Area, Walton, Delaware Co., NY, June 7, 1968. USDA/SCS Photo by Robert E. Dwyer, No. N.Y.-1012.